

MYCOTAXON

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A new *Stemonitis* species from TurkeyHASAN HÜSEYİN DOĞAN^{1*} & GÖNÜL EROĞLU¹¹University of Selçuk, Faculty of Science, Department of Biology, 42075 Konya, Turkey* CORRESPONDENCE TO: hhuseyindogan@yahoo.com

ABSTRACT — *Stemonitis mediterraneensis* is described herein as a new species of myxomycete from material collected on a rotten wood remnant of *Abies cilicica* subsp. *cilicica* from Adana-Aladağ in Turkey. The new species is characterized by rough warty pale brownish to yellowish-brown spores and smooth capillitia lacking spines.

KEY WORDS — Mycetozoa, Protista, slime moulds, Stemonitidaceae

Introduction

Myxomycetes are a small, relatively homogeneous group of eukaryotic organisms (Stephenson & Stempen 1994). They occur on a variety of substrates such as living plants as well as decaying logs, dead leaves, and other organic matter (Alexopoulos et al. 1996). Since Gleditsch (1753) first described *Stemonitis* Gled., 17 species have been identified (Lado 2005-2014), including nine recorded in Turkey (Sesli & Denchev 2014). Recent morphological examination has revealed a new species, *S. mediterraneensis*, bringing world's total *Stemonitis* species to 18.

Materials & methods

Morphological observations and measurements were conducted under a Leica Z 6 APO-A stereoscopic microscope (Leica Microsystems CMS GmbH, Mannheim, DE). The total height of the sporocarps as well as height and width of the sporotheca were measured. Whenever possible, 15 sporocarps of each collection were checked (110 sporocarps in total). Microscopic characteristics were observed and measured from material mounted in Hoyer's medium under a Leica DM-750 light microscope. A total of 110 spores (including ornamentation) were measured using an oil immersion objective; spore color and ornamentation also were determined. SEM images were prepared with a Zeiss DSM-950 scanning electron microscope (Micronova, Espoo, Finland). Specimens are conserved in the Fungarium, Mushroom Application and Research Center, University of Selçuk, Konya, Turkey (KONF).

Taxonomy

Stemonitis mediterraneensis H.H. Doğan & Eroğlu, sp. nov.

FIGURE 1

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Differs from *Stemonitis mussooriensis* by its smaller spores with shorter rougher warts.

TYPE: Turkey. Adana: Aladağ, Meydan Yaylası, Ceritler, 37°29'01"N, 035°19'45"E, 1265 m, on rotten wood of *Abies cilicica* (Antoine & Kotschy) Carrière subsp. *cilicica*, 27 Oct. 2011, leg. H.H. Doğan 9315 (Holotype, KONF HD 9315; Isotype, KONF GE 560).

ETYMOLOGY: referring to the Mediterranean region where the specimens were collected.

SPOROCARPS in groups, cylindrical, total height 2.2–3.5 mm, dark brown. Sporotheca 1.5–2.8 mm in length and 0.2–0.4 mm in diameter. STALK short, about 1/2–1/3 of the total height, 0.7–0.8 mm in length, shining, dark brown. PERIDIUM fugacious. COLUMELLA 7–8 µm wide, cylindrical, dark brown, opaque, similar in color to the stalk, tapering gradually upwards and merging into the capillitium just below the apex. CAPILLITIUM 1–1.5 µm in diameter, pale brown, with a surface net consisting of variable-sized meshes (4–110 µm), smooth, not bearing spines and the internal reticulum 3–4 meshes over the radius; the surface net delicate with angular meshes and attached to the columella. SPORES (8.5–)9–10.6 µm in diameter, globose, covered with rough warts, pale brownish, yellowish brown under the light microscope. By SEM, the ornamentation consisting of regularly distributed and isolated spiny warted 0.3 µm long projections. HYPOTHALLUS discoid under the separate sporangia, yellowish brown.

ECOLOGY & DISTRIBUTION: Found on rotten wood of *Abies cilicica* subsp. *cilicica* in a mixed forests of *A. cilicica* subsp. *cilicica* and *Cedrus libani* A. Rich.

Discussion

Stemonitis is characterized by stalked cylindrical sporocarps, an evanescent peridium, a columella that almost reaches the top of the sporocarp, a pale brown, red brown or dark brown capillitium that arises from the entire length of the columella, the absence of capillitial spines, spores that are dark brown, rust brown or lilac grey in mass and usually pale brown in transmitted light.

Morphologically and anatomically, six species are very close to *Stemonitis mediterraneensis*; the seven similar species can be distinguished as follows:

Key to *Stemonitis mediterraneensis* and related species

- 1. Spores reticulate2
- 1. Spores with isolated warts or blunt spines.....3
- 2. Spores usually ≤8 µm*S. virginiensis*
- 2. Spores usually ≥8 µm *S. fusca*
- 3. Spores usually ≤6 µm*S. axifera*
- 3. Spores usually ≥6 µm 4

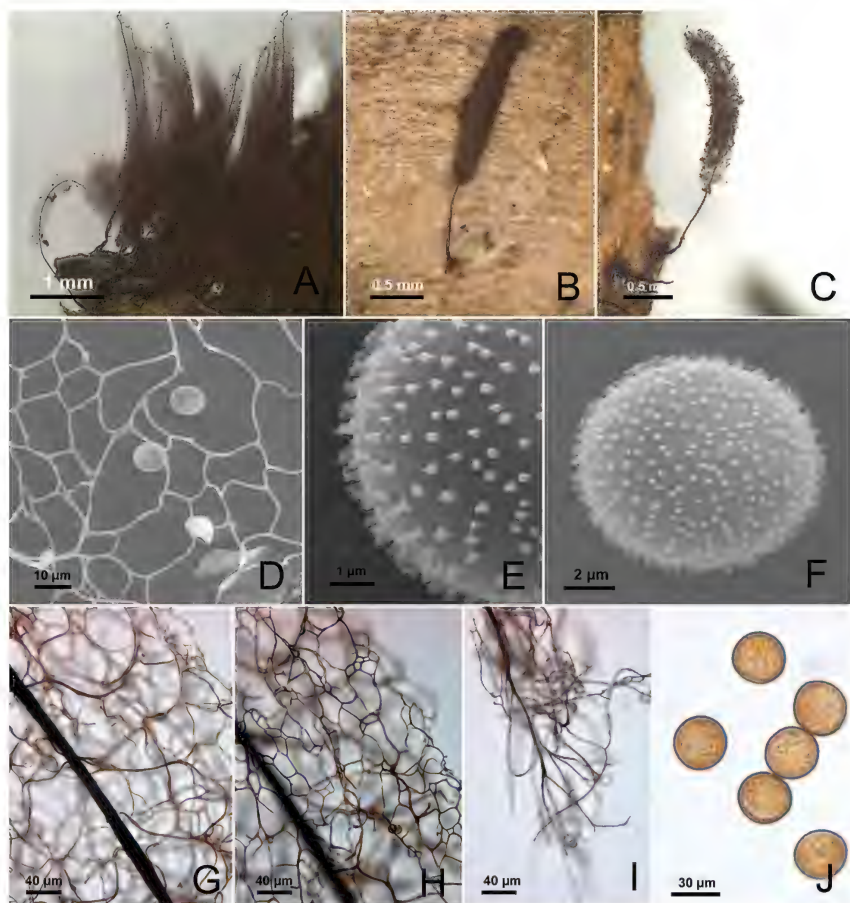


FIGURE 1 – *Stemonitis mediterraneensis* (holotype). A: Sporocarps (SM). B, C: An entire sporocarp (SM). D: Capillitial meshes and spores (SEM). E: Detail of spore ornamentation (SEM). F: Spores (SEM). G, H: Capillitial meshes (LM). I: Expanded columella apices (LM). J: Spores (LM).

- 4. Surface net small-meshed5
- 4. Surface net large-meshed6
- 5. Stalk 1/4–1/3 of the total height*S. pallida*
- 5. Stalk 1/5–1/4 of the total height, sometimes almost lacking.....*S. herbatica*
- 6. Spores bearing fine pale warts.....*S. mussooriensis*
- 6. Spores bearing rough spiny warts..... *S. mediterraneensis*

Its rough warty spores distinguish *Stemonitis mediterraneensis* from *S. fusca* Roth and *S. virginiensis* Rex, both characterized by reticulate spores with rows

of spines, some of which are connected by ridges (Nannenga-Bremekamp 1991, Ing 1999). *Stemonitis mediterraneensis* is close to *S. axifera* (Bull.) T. Macbr., *S. pallida* Wingate, *S. herbatica* Peck, and *S. mussooriensis* G.W. Martin et al. in its spore ornamentation, but its spore morphology easily distinguishes the new species. The colorless spores of *S. axifera* are smaller (5–6 µm) and almost smooth to covered with very small, pale warts. The pale rust spores in *S. pallida* are also smaller (6.5–7.5(–8) µm) and ornamented with pale warts, sometimes appearing almost smooth (Nannenga-Bremekamp 1991; Stephenson 2003). In spore size, *S. herbatica* and *S. mussooriensis* are the most closely related species to *S. mediterraneensis* but can be distinguished by the lilac brown color of the spores.

The absence of a spinose surface net, shared by *Stemonitis mediterraneensis* and *S. herbatica*, distinguishes those two species from *S. fusca*, *S. virginensis*, *S. pallida*, and *S. mussooriensis*, all of which have a spinose surface net. Its unique combination of macroscopic, capillitial, and spore features easily support *S. mediterraneensis* as an independent *Stemonitis* species.

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